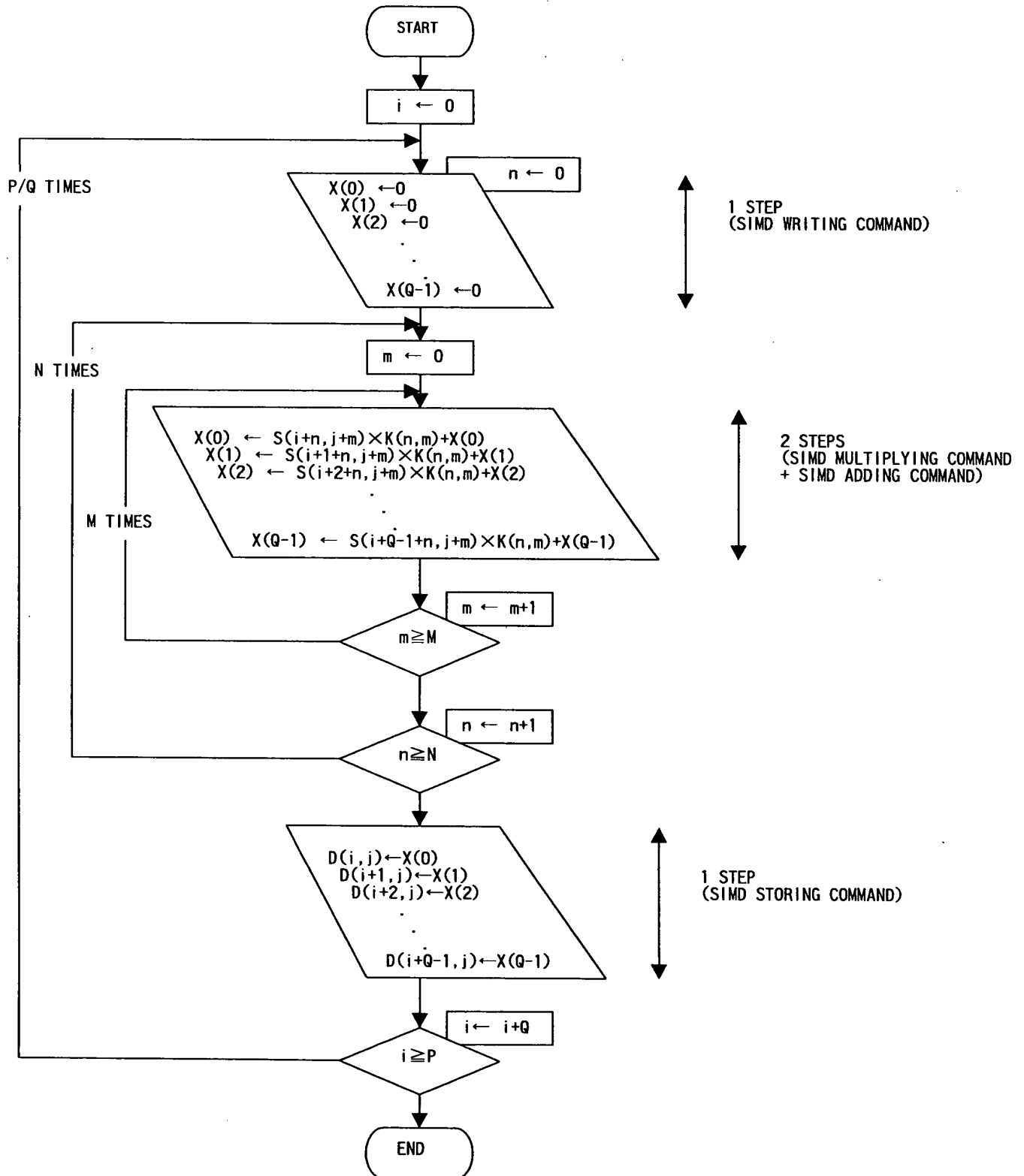
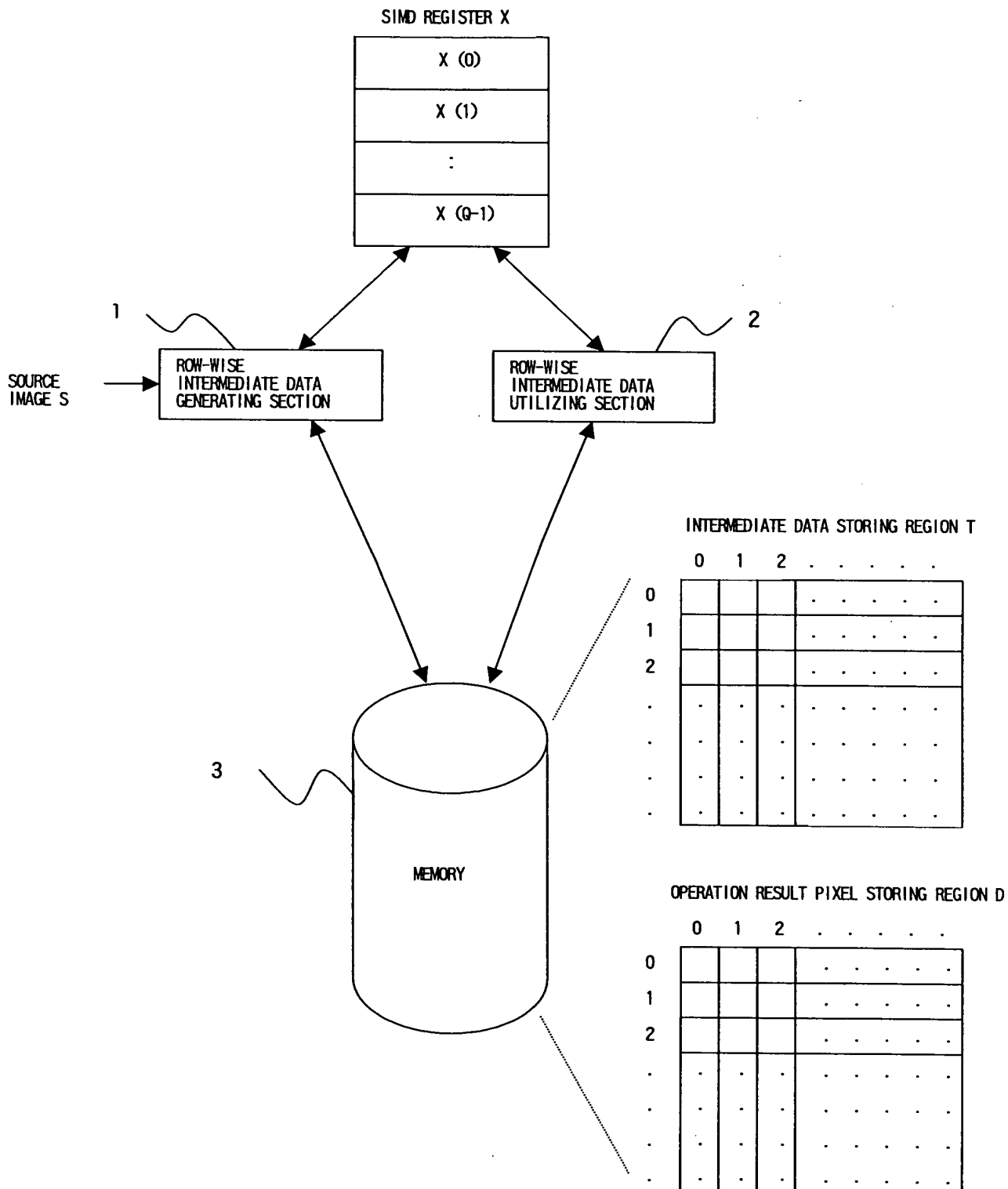


F I G. 1 PRIOR ART



SIMD REGISTER X

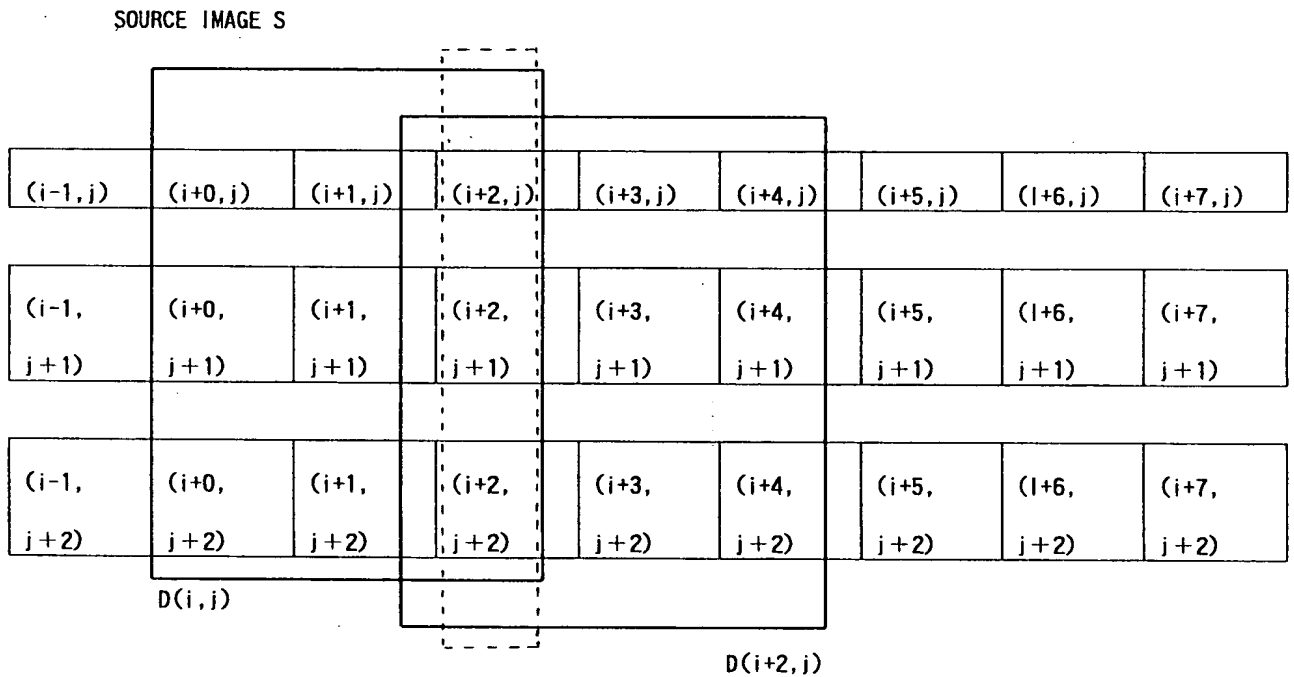


F I G. 3

SYMMETRIC KERNEL COEFFICIENTS

K(0,0)	K(1,0)	K(2,0)
K(0,1)	K(1,1)	K(2,1)
K(0,2)	K(1,2)	K(2,2)

IN THIS,
 $K(2,0) = K(0,0)$
 $K(2,1) = K(0,1)$
 $K(2,2) = K(0,2)$



D(i, j), D(i+2, j): TWO OPERATION RESULT PIXELS POSITIONED IN THE SAME ROW

$$D(i, j) = S(i, j+0) \times K(0,0) + S(i+1, j+0) \times K(1,0) + \underline{S(i+2, j+0) \times K(2,0)}$$

$$+ S(i, j+1) \times K(0,1) + S(i+1, j+1) \times K(1,1) + \underline{S(i+2, j+1) \times K(2,1)}$$

$$+ S(i, j+2) \times K(0,2) + S(i+1, j+2) \times K(1,2) + \underline{S(i+2, j+2) \times K(2,2)}$$

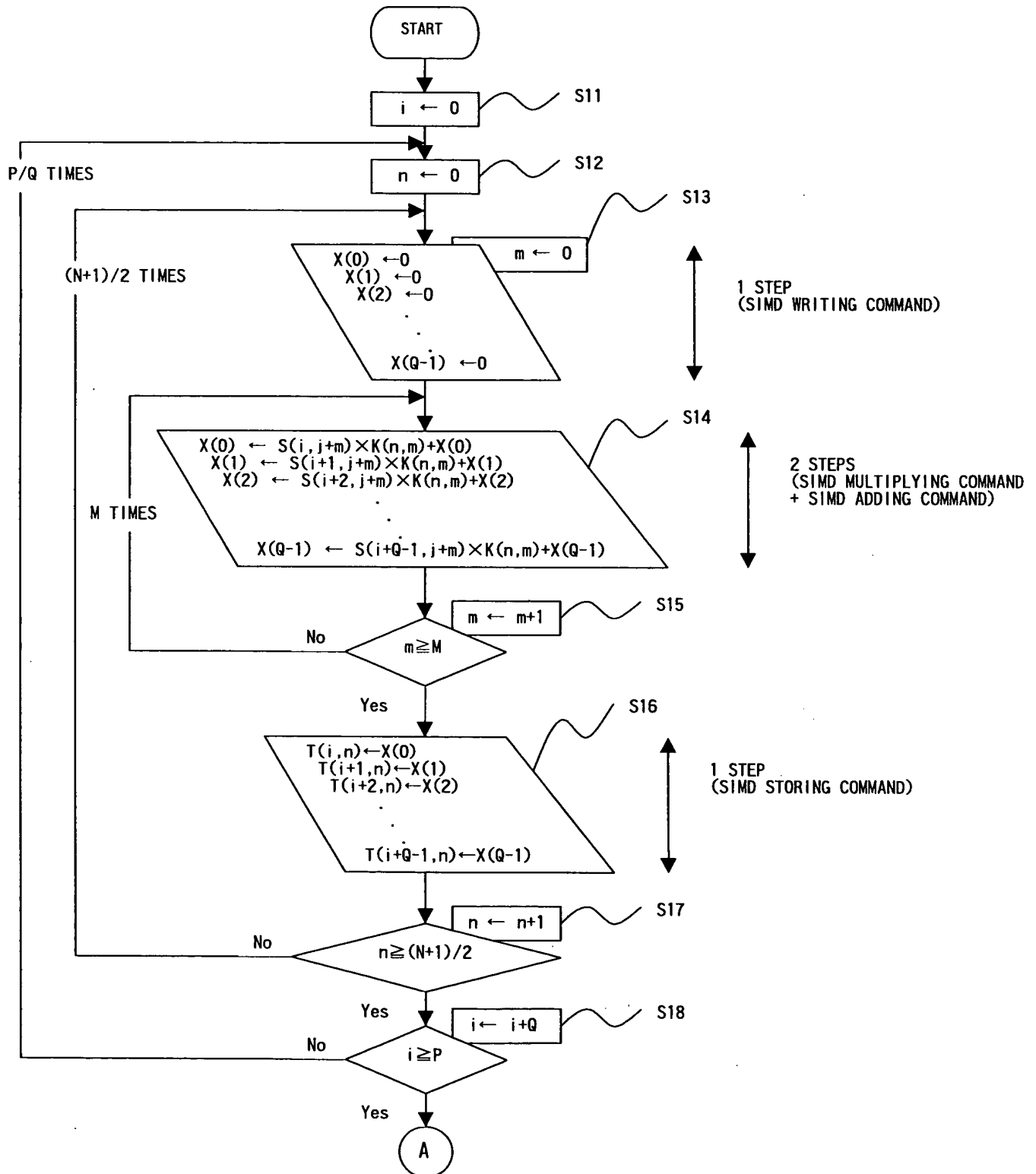
COMMON ITEMS

$$D(i+2, j) = \underline{S(i+2, j+0) \times K(0,0)} + S(i+3, j+0) \times K(1,0) + S(i+4, j+0) \times K(2,0)$$

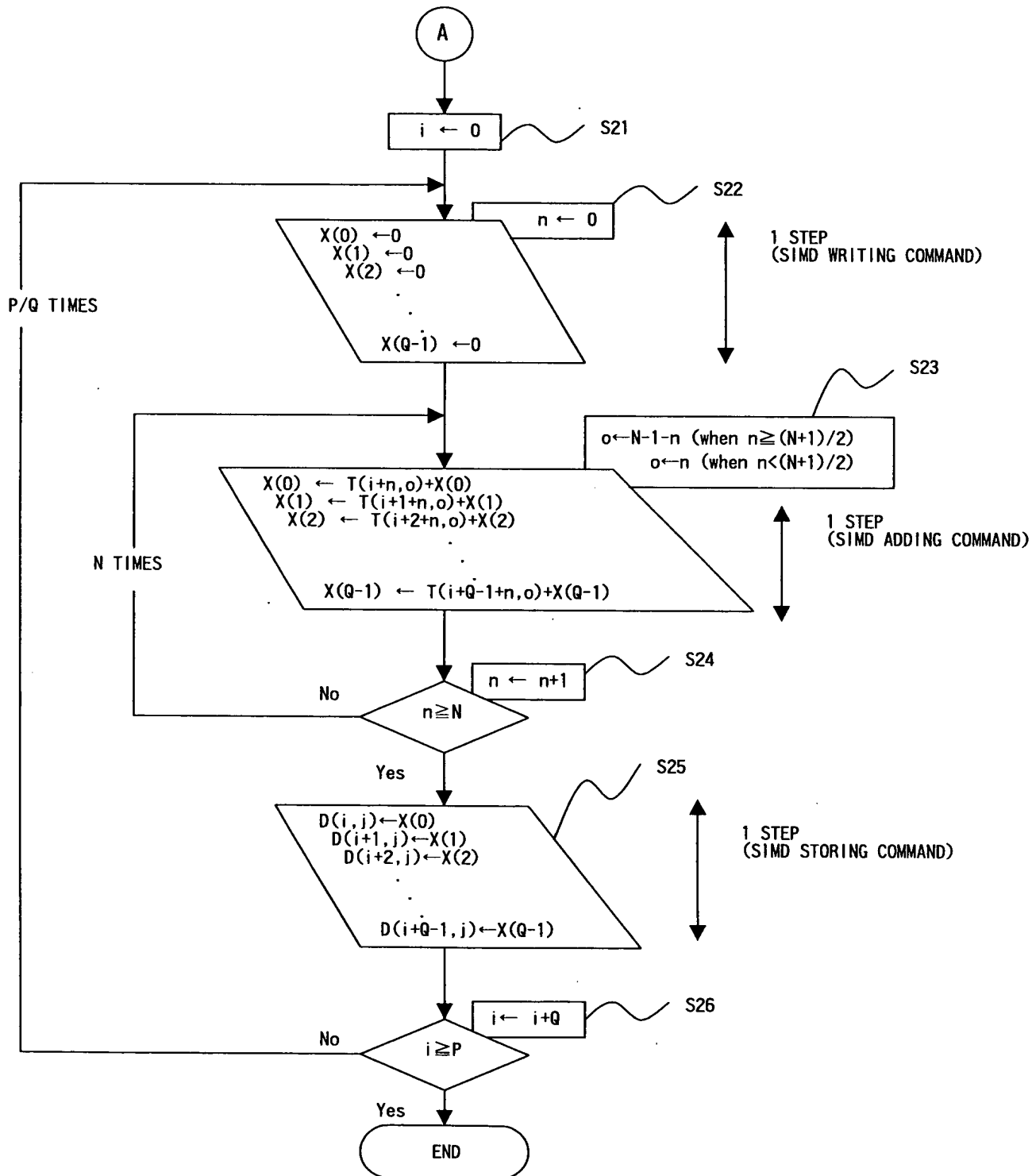
$$+ \underline{S(i+2, j+1) \times K(0,1)} + S(i+3, j+1) \times K(1,1) + S(i+4, j+1) \times K(2,1)$$

$$+ \underline{S(i+2, j+2) \times K(0,2)} + S(i+3, j+2) \times K(1,2) + S(i+4, j+2) \times K(2,2)$$

FIG. 4A



F I G. 4B



F I G. 5

		n →												
		0	1	2	3	4	5	6	7	8	9	10	11	12
m ↓	0	0	0	0	0	0	-1	-1	-1	0	0	0	0	0
	1	0	0	0	-1	-1	-2	-2	-2	-1	-1	0	0	0
	2	0	0	-2	-2	-3	-3	-4	-3	-3	-2	-2	0	0
	3	0	-1	-2	-3	-3	-3	-2	-3	-3	-3	-2	-1	0
	4	0	-1	-3	-3	-2	+4	+6	+4	-2	-3	-3	-1	0
	5	-1	-2	-3	-3	+4	14	19	14	+4	-3	-3	-2	-1
	6	-1	-2	-4	-2	+6	19	24	19	+6	-2	-4	-2	-1
	7	-1	-2	-3	-3	+4	14	19	14	+4	-3	-3	-2	-1
	8	0	-1	-3	-3	-2	+4	+6	+4	-2	-3	-3	-1	0
	9	0	-1	-2	-3	-3	-3	-2	-3	-3	-3	-2	-1	0
	10	0	0	-2	-2	-3	-3	-4	-3	-3	-2	-2	0	0
	11	0	0	0	-1	-1	-2	-2	-2	-1	-1	0	0	0
	12	0	0	0	0	0	-1	-1	-1	0	0	0	0	0

F I G. 6

[illegible]

F I G. 7

THE NUMBER OF N AND M	REDUCED RATE OF OPERATION STEPS (%)
3	16.67
5	30.00
7	35.71
9	38.89
11	40.91
13	42.31
15	43.33
17	44.12
19	44.74
21	45.24
23	45.65
999	49.90